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THE BRISTOL MEDICO-CHIRURGICAL JOURNAL

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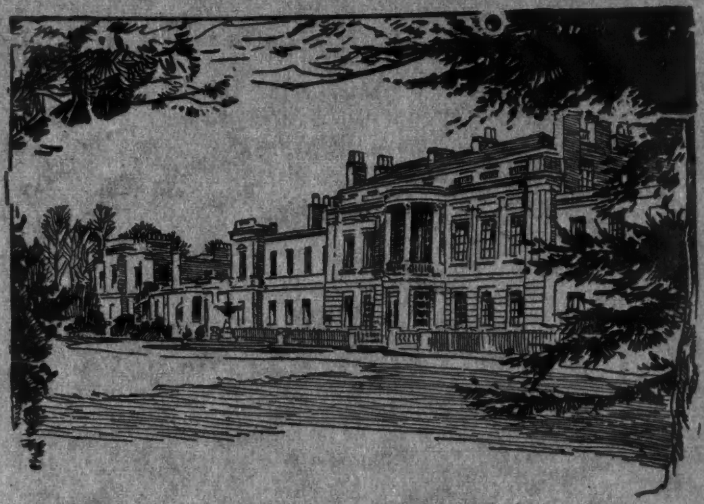

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The Bristol Medico-Chirurgical Journal

A Journal of the Medical Sciences for the

West of England and South Wales

" Scire est nescire, nisi id me
Scire alius sciret."

JANUARY, 1950

MEDICINE IN EIGHTEENTH-CENTURY BRISTOL

The Presidential Address, delivered on Wednesday, 12th October, 1949, at the opening of the Seventy-first Session of the Bristol Medico-Chirurgical Society

BY

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The President introduced his remarks by a short survey of the social and economic conditions in Bristol in the middle of the eighteenth century, with acknowledgments to Latimer's *Annals of Bristol in the eighteenth century*, Munro Smith's *History of the Bristol Royal Infirmary*, and other sources. He quoted from *English Social History*: " Good doctoring rather than better social conditions was the cause of the great increase in population which took place "; and continued:

I can't see myself that there *was* all this great improvement in doctoring. It seems to have been still largely under the influence of Mumbo-Jumbo.

What diseases did our predecessors treat? It is difficult to be precise, for their methods of diagnosis were necessarily so imperfect that they arrived very often at no " diagnosis " in our sense of the word. Scan the eighteenth-century records of

patients examined at the B.R.I. and you will find that in the majority of cases the " diagnosis " recorded is merely the predominant symptom. Thus " cough " figures very largely in the winter months. " Suppression of menses ", and " anaemia " are two other favourite entries. Phthisis is not infrequently given as the cause for the patient's attendance, and one wonders! Without any means of auscultation more delicate than the human ear applied to the chest, without a stethoscope, without X-rays, one wonders how they were sure. But doubtless the signs of the wasting disease accompanied by cough, " hectic " temperature and phthisical facies made the probability only too likely. Another feature which leaps to the eye in these books of attendances is the wonderful way in which they cured their patients, from cough, fever, suppression of menses, anaemia—90 per cent. of the entries have " cured " against them. A few of the cachectics and phthisics have " relieved ", and some of them are recorded as " non-attendance ": only too often a euphemism, one fears, for death. On the whole one can guess pretty well what diseases would be prevalent in a city overcrowded with very many indigent poor and no public health service. Typhoid was common, cholera often put in its dread appearance, plague was not unknown (but rare in the eighteenth century and then brought in from the East by ship). Small-pox, typhus and enteric raged through a population little addicted to cleanliness. Hospital gangrene stalked the wards and carried off many victims after even the smallest and least dangerous operations according to our view. The nursing was done by a body of women almost totally uneducated and illiterate, many of them drunken sluts, of whom, years later Sairey Gamp was only too apt a picture.

And with what remedies did our forefathers attack the prevalent disorders? Well, the apothecaries were the most ardent and venturesome drug dispensers the world perhaps has ever seen. Then, as now, the backbone of the profession was the apothecary who corresponded in many ways to the G.P. of to-day. These people appear to have done almost all the work of the profession. They saw all the ordinary patients, prescribed for them the most colossal amount of drugs, had them made up and sent round. They worked tremendously hard and their assistants

worked even harder. The apothecaries started, originally, as people who in their grocers' shops sold drugs : but for more than 100 years at this time they had been separated from such companions, a considerable period (120 years) before similar divorce of the barbers from the surgeons. There was at this time no diploma for apothecaries. Apparently anyone who wished could set up in a shop where drugs were sold and medical stores (such as they were) dispensed. They started seeing patients at home. They could not charge for attendance but only for medicines supplied, a space frequently being left below the account where it was stated " attendance, what you please ". It is recorded of Broderip, one of the most successful of eighteenth-century apothecaries, that on one occasion he was given a douceur of £50 in addition to his account of £30 for drugs. Originally the apothecaries were kept very much under the control of the Royal College of Physicians, who limited their powers of dealing with patients. But in the eighteenth century they had largely succeeded in escaping from this position. Although they were greatly despised by the Physicians yet before the end of the century the latter had found it was much wiser to keep on good terms with them. The best apothecaries seem to have been those who were fortunate enough to be assistants in the Infirmary, where they served an apprenticeship which varied in time from one year to several years, during which they saw a great number of patients and dispensed many thousands of prescriptions. Then they set up for themselves. The amount of drugs they dispensed was almost incredible. R. Smith relates that a Mr. Archer who lived in his family paid £350 in three years for medicines. Even the endocrinologists nowadays would not cost more with their remedies if one reckons the value of money then and now. Broderip, one of the busiest apothecaries, was said for years to have made £4,000 a year. One year he booked £5,993 but £1,900 was bad debts (worse than at present!). His carriage was said to have stopped at sixty houses in a day. He inoculated for smallpox (three to five guineas), he bled people, his assistants dispensed drugs up to midnight. One family took on their summer holiday 200 tonic draughts and 1,000 pills.

Some of these people did not hesitate in the least to advertise.

In 1760 James Grace advertised in the Bristol papers that he had fitted up his shop opposite the pump in Peter Street. " County people afflicted with any sort of disease by sending the state of their several complaints will be fitted with such medicines as shall speedily cure them." One man advertised that " he certainly cures cancerous complaints, scurvy, rheumatism, dropsy and gravel ". (*How* I wish I could!)

In 1754 there were twenty-nine apothecaries in Bristol, in 1793 there were thirty-five. We are not informed how many physicians.* The apothecaries seem to have dressed more or less like ordinary folk without distinctive marks (different from the physicians). They lived scattered all over the city. Broderip the famous one, when he was making £4,000 per annum, built a house out towards Westbury over Durdham Down: but generally doctors " lived over the shop " and not a bad idea either. A great deal of the medicines they dispensed was what we should call the merest excipients and placebos: but one man used two cwt. of Epsom salts per annum. In three or four months one boy had sent in 469 draughts besides medicines. One patient was ordered twelve draughts a day. How far we have travelled!

Four shillings was the usual charge for a packet of twelve powders, chiefly rhubarb, chalk and a very small dose of antimony. During the eighteenth century the practice of drug taking reached the " all time high " and by 1810 the physicians and druggists had ousted the apothecaries and the practice then died down.

The physicians would have felt extremely irritated at being taken second in my list, for they considered themselves in every way immensely superior to the apothecaries. They were all of them persons with university degrees from Oxford or Cambridge: and a little later Edinburgh and Dublin graduates were permitted to practice as physicians. There was a curious loophole, apparently in Bristol, indeed, a very unusual one: that the Archbishop of Canterbury could and did frequently in the past issue his licence to practise to physicians. In 1745 I find that a certain John Coopey of Bristol was granted a licence by the

* Doctors of Medicine, 1754 (Harsant) 5: 1794 (Matthews) 14. *Jl.*, 1946, LXIII, p. 92 (Ed.).

Vicar-general of the bishopric: but this is the only one I have found at this time. As a whole the physicians were well educated men of considerable general culture, usually high Tory in politics (inclined to Jacobitism). They tried to make it a rule at the Infirmary that all admissions should be signed by the physician, whether surgical or medical. Eventually after an acrimonious discussion and the threat of wholesale resignations a compromise was effected, or thought to be, by the resolution they passed. "No surgeon shall be allowed to sign any admission ticket when the physician for the week is present but in the physician's absence the surgeon may sign admission tickets for surgical patients." This was apparently rated as a successful compromise but the surgeons contrived to make it a dead letter by keeping the physicians waiting as long as possible.

The physicians dressed for the part in a most dignified way in ruffles and voluminous red cloaks. The red cloak was called a Roquelaure and was almost pathognomonic of the physician. Also a sword was carried. They were required not to live far away so as to be on call at night. It was stated that footpads might prevent their coming from Clifton which had a population of 450 including the Hotwells. The precincts of St. Michael's Hill were praised in a poem in 1712. Mostly they lived in St. James's Barton, round St. Mary Redcliffe and increasingly in Queen Square where Dr. Dover (of powder fame) had one of the first houses built. He had been second in command of a great privateering expedition in 1710 and commanded the captured Spanish galleon. When someone towards the end of the century moved out to Clifton it was doubted as to whether he could properly carry out his duties. Park Street was taken over on lease for building in 1740, but not much was started until 1760.

Physicians' fees were one guinea a visit. We learn this from a complaint as to the stipends of the clergy which averaged £70 per annum: many at £30, most not above £100. It was complained "you do not think a physician overpaid for one guinea a visit but expect to receive a year's services from a clergyman for £5." Two guineas might be charged for a visit to Bedminster or Clifton but never less than one guinea at night. Physicians seem, in some cases, to have been called only to

patients *in extremis*—*nunc dimittis* cases. This is not unusual even to-day. They always felt that musk was required in final prescriptions—so to speak, one could not die without musk (the odour of sanctity). Richard Smith says he often smelt it in the street outside the house of a dying patient. Few could depart without it who could afford it. The bottle cost 12s.—the draft 1s. 6d. and the musk 10s. 6d. How much real knowledge they possessed, how much good they did is very debatable. "A physician is a man who puts into bodies of which he knows little, drugs of which he knows less to cure diseases of which he knows nothing at all" was a jibe which had a certain amount of truth in it. But scan the old records of the B.R.I. and you will be astonished at the number of their cures. Eighty per cent. of the people are stated to have been cured, about 15 per cent. are improved. Results were better than we can fairly and truthfully claim to-day.

Small Pox was a dreaded plague which with each decade of the eighteenth century carried off 10 per cent. of the population and left 20 per cent. disfigured, scarred and blinded. If the infection reached a city, markets stopped, business was at a standstill, the sick were deserted and left to live alone in horror and pain. Every beautiful woman feared lest she should be stricken and left an object for pity rather than for admiration.

[The lecturer next gave an account of the Hotwells.]

The third group of our profession was surgeons. As already pointed out the divorce of the apothecaries from the grocers had already taken place in the seventeenth century and although the College of Physicians strove to keep the apothecaries in their place and a very subordinate one it was, yet by this time the apothecaries had acquired a status of their own and a large degree of independence of the College. But the surgeons were still officially at the beginning of the century "barbers"—barber-surgeons. Some of them practised both branches, e.g. a man called Rosewell to whom was apprenticed William Underhill, who was the first surgeon appointed to the Infirmary. He used to bleed numbers of people on Sundays for a sixpence or a shilling. Another barber in Redcliffe, Henry Haines, used to charge 2d. a shave, 1½d. for a haircut and 6d. a bleeding. Everyone he bled got two quarts of good ale free but you only got a pint with your

haircut. One wonders how he managed to make a profit when the brewers' charge was 2d. a gallon. Do I hear a long thirsty sigh rise from the depths of the breasts of some of my audience? Those of us who have attended the efficient bleeding services run by the Blood Donor Organization will remember that while lying down after the removal of our pint our depleted tissues were restored by a cup of strong tea with condensed milk and sugar. Dr. Tovey has learned from two hundred years ago.

But by 1740 the relations of the two wings of the Barbers Company had become very strained. Surgeons were more and more refusing to deal with anything but surgery and in 1739 a number of peruke makers presented a petition to the Barbers' Council complaining of the divers impositions and grievances inflicted on them by the surgical brethren. This was referred to a committee but nothing more was heard of it. Even in those days they knew how efficacious a method this was of avoiding criticism. The company gradually died out as the surgeons refused to belong to it. In 1745 the [London] surgeons petitioned parliament for separation from the barbers and this was granted in June of that year. Soon afterwards [1800] the College of Surgeons came into being as the governing body of the surgeons. The surgeons were apprenticed as students to practising surgeons as private pupils living with the surgeon and assisting him, paying what were in those days good fees. Mr. James Ford, surgeon to the B.R.I. received in thirteen years £708, (below average). The other pupils were Infirmary surgical pupils apprenticed to all the visiting surgeons. These paid each of the five surgeons four guineas per annum and increased greatly in number. In 1758 we find in the records, " Surgeons are allowed to bring apprentices to assist them and allowed to take two pupils and to take money for teaching them ".

The surgeons were undoubtedly men of considerable skill and acumen. Their results were lamentable due to complete ignorance of infection. They operated in old coats, stiff with blood, they stuck the needles in the lapels of their coats, they prided themselves on the filthy condition of their operating coats. They produced, when lucky, " laudable pus " : when unlucky hospital gangrene carried off their patients and that only too often. But when we remember that they had to operate without

anaesthetics, to operate in the shortest possible time, to cut for stone by lateral lithotomy on a struggling patient in an ill-lighted room, we can only marvel at their manual dexterity. Their knowledge of anatomy was not very good but they constantly sought to improve it. They dissected the body of every criminal executed: and you could be executed for everything from a theft of about 5s. They also dissected the bodies of those newly buried and paid the people who did the body-snatching. The annals of the Infirmary are full of gruesome albeit amusing stories of the various contretemps which arose between body-snatching students and grave-guarding relatives. Various courses in anatomy were given by the surgeons at which anyone might attend. Page and Ford ran one in 1746 and another was carried on in 1777 apparently not completely successful either financially or otherwise. It was not until well on in the nineteenth century that the Anatomy Act put an end to the scandal of body-snatching, by providing " subjects " for the proper instruction of students. And yet in spite of all the drawbacks under which they laboured they did good work, these surgeons. Those on the Infirmary staff were the cause of the good name of the B.R.I. being carried all over the West country. But the vast majority of them did not have the opportunities or privileges of being members of the B.R.I. Faculty. They bled patients, did minor operations in houses, set fractures, reduced dislocations. Many of them (even Richard Smith, Junior, the famous Infirmary surgeon), to begin with acted also as apothecaries. They were less well educated as a rule, of lower social status and inferior position to the physicians. Yet they seem on the whole to have been most successful and better professional men. It was on the whole a prosperous, busy, rumbustious existence with leisure almost entirely occupied in conviviality. They were a hard-drinking, large-eating race of men.

I began by quoting Trevelyan and I end by returning to him again. He depicts the eighteenth century as a classical age of freedom, development, culture with improved amenities of life, a more tolerant outlook, a higher standard of living, greater power of enjoyment and living longer to enjoy it: and doubtless he is right. In spite of the cheapness then of all the things now so dear, and the more leisured ways of those times, I am

profoundly thankful that my own professional life has been lived in the twentieth and not in the eighteenth century.

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Cf. also *Jl.*, 1899, XVII, 297; 1908, XXVI, 193; 1912, XXX, 327.

THE XXXVIII LONG FOX MEMORIAL LECTURE

Delivered in the University of Bristol
on Tuesday, October 5th, 1949

BY

JOHN E. HARRIS
Professor of Zoology in the University of Bristol.

ON

THE USE OF TRACER ELEMENTS IN BIOLOGY AND MEDICINE

The term "tracer element" is used to describe elements which are chemically identical with, but physically different from the ordinary forms of elements occurring in nature. Their chemical identity implies that such elements take part in all the reactions of the living organism in exactly the same manner as does the normal counterpart; but their physical differences are a label by which we can follow their path through any system into which they may be introduced. Deuterium ("heavy" hydrogen) was one of the first of such elements to be extensively employed, and Schonheimer and Rittenberg in the U.S.A. brilliantly exploited its use from 1935 onwards in studies of metabolic changes. Organic compounds containing the heavy hydrogen isotope, when burnt, yield heavy water which can be estimated simply by determining its specific gravity.

Schonheimer and his colleagues were able to show that the metabolic changes occurring in the body were not a system of one-way traffic routes, in which nutrients (and water) went through a sequence of clearly defined chemical processes and finished up as some definite end product: but that most of the chemical products in the body tissues were taking part in a continuous ebb and flow of reactions, interchanging material unceasingly—a sort of physiological witches' cauldron, to which has been given the name of the "metabolic pool" of the organism. This pool takes in material—digested foodstuffs, water,

oxygen, etc.—and releases waste products like carbon dioxide, and urea. But within it nothing is static; even the fats and proteins which are the building bricks out of which our bodies are made are continuously breaking down and being rebuilt.

In the study of such manifold and intricate changes tracer elements can play an increasingly important part. Certain elements (of which nitrogen is of fundamental interest) are only available for study in the form of stable isotopes. If only small amounts of the heavy isotope are present, or if its physical properties are very similar to those of the normal isotope, crude density measurements are inadequate to estimate its content. In such circumstances the mass spectrograph, a magnetic separator, is employed; this simultaneously sorts and estimates the relative amount of heavy isotope present in a sample.

By far the most spectacular of the isotopes used nowadays are those which are unstable, the so-called radioactive isotopes. The atoms of these particular isotopes undergo spontaneous nuclear breakdown, liberating enormous amounts of energy in the process. This energy appears in the form of high velocity particles (electrons) or as radiant energy (gamma-rays). The very high energy content of these radiations makes it comparatively easy to detect even a single atomic disintegration. The instrument commonly used for this purpose is the Geiger counter which, when it is traversed by an atomic particle or a gamma-ray, releases a sudden minute surge of current; this current is amplified and operates a mechanical counter as each particle arrives.

A pilot experiment carried out in my department will best serve to illustrate the experimental technique used in studying a particular problem. Into an ordinary earthworm was injected a small quantity of radioactive phosphorus (in the form of phosphate in physiological salt solution). The actual amount of radiophosphorus injected is unbelievably small—a total injection of 10^{-12} grams of P^{32}. Twenty-four hours afterwards, when the material was thoroughly distributed and taking part in the body metabolism, the worm was killed. Various organs or tissues, the nerve cord, the genital tissues, parts of the gut, the body wall, etc., were then isolated by dissection. Each part was completely broken up (homogenized) in distilled water by a

high-speed stirrer: and a fraction of the "soup" produced was evaporated to dryness on a small standard nickel tray. The contents of radiophosphorus on each tray were then compared with the help of the Geiger counter. The results are given in Table 1.

TABLE 1

Uptake of Radiophosphorus by the Earthworm

Total injection 5μC of P^{32}. Duration of experiment twenty-four hours

Specimen	*Count*
Body wall	1132 per minute
Nerve cord	326 ,, ,,
Intestine	2680 ,, ,,
Oesophagus	7068 ,, ,,
Seminal vesicle	2260 ,, ,,

It will be seen that in comparison with the body wall, the nerve cord has a very low uptake of radiophosphorus, while the gut and seminal vesicles show a very high count. The highest count of all is recorded in the oesophagus and later experiments have confirmed this concentration.

Another method of detecting radioactive tracers, which has considerable value in certain cases, is that of auto-radiography. Again, it will be simplest to provide an example from our own work. A dogfish embryo in the egg case was injected in the yolk sac with an approximately similar amount of P^{32} to that used in the case of the earthworm. The embryo was fixed, embedded in paraffin wax and cut into sections 10μ thick. Some of these sections were stained and mounted in the normal way; others were plated out on to a new type of photographic emulsion which is sensitive to the passage of individual electrons, whose tracks show up in the developed emulsion as a chain of black dots. Each track is the product of a single atomic breakdown, and the method is therefore extremely sensitive. Pieces of tissue of only 1/10,000 the size of those used in the previous experiment produce intense blackening of the negative below active parts of the section, and we can detect the radioactivity of organs and structures which are much too small to be dissected out successfully.

The auto-radiograph shows that there is a high concentration of radiophosphorus in the brain, in the pharyngeal region and in the tubules of the pro-nephric kidney. The remainder of the tissues recognizable at this stage (heart, gut and muscles) show a much lower activity.

To understand the meaning of experiments such as these, it is necessary to point out that phosphorus plays a vitally important part in animal and plant metabolism. Its importance in the cell lies in the fact that it occurs in the nucleic acid molecule, and is therefore essential to the production of new cells and new protoplasm, both of which involve initially an increase in the amount of nucleic acid. Though the actual phosphorus content of living cells is not as high, for example, as that of bone, the rate of turnover is so rapid that such cells, particularly if they are growing or reproducing rapidly, exchange in the process very considerable amounts of P^{32} with their environment. The brain shows a high P^{32} uptake in the embryo since there is at this stage in the life-history a very rapid synthesis of new nerve protein as well as a rapid division of nerve cells: the adult nervous system (except when a wounded nerve is regenerated) is comparatively static, as the P^{32} content of the earthworm nerve cord shows.

Phosphorus is also an essential element of the energy-producing mechanisms of the body, whether physical energy, as produced in muscle, or chemical energy, as in secreting cells like those of the oesophagus and kidney. All such sites show a high phosphorus exchange and therefore a high uptake of P^{32}.

One of the practical applications of this to medical problems lies in the fact that cancer cells are physiologically in a state of great reproductive activity and growth. They therefore pick up P^{32} more rapidly than the more static surrounding cells. Small areas of surface cancers, undetectable in their early stages by superficial examination, have been detected and located by injecting P^{32} into the patient and then exploring the body surface with a Geiger counter. As one of the promising fields for the treatment of cancer lies in the possibility of a successful early *diagnosis*, this may well prove to be a significant advance.

At first sight, the use of radioactive tracers may appear to offer even more attractive possibilities. One of the most effective

methods of treating cancer at present is by X-rays or by radium: the nucleic acid machinery of the cell is extremely sensitive to such radiations. Since P^{32} emits high energy electrons its disintegration is equivalent to a local irradiation of any tissues in which P^{32} is accumulated; the electrons emitted have only a limited penetrating power, so that treatment of a patient with P^{32} ought to be a practical method of selective irradiation of the carcinomatous sites. Unfortunately, this promising scheme breaks down for the same reason as that which limits the value of normal radiotherapy; not only the cancer cells but all other cells which are rapidly reproducing are equally sensitive. In particular, the leucocytes have a high nucleic acid metabolism—they are consequently very sensitive to irradiation and also accumulate P^{32} with great rapidity. X-ray or radium treatment can be limited to areas immediately adjacent to the main site of the disease and some degree of differential dosage of the malignant as opposed to normal tissues is therefore possible. P^{32} accumulates in *all* growing cells, and in practice the leucocytes succumb first.

This feature has, however, been successfully exploited in the treatment of a very rare disease—polycythaemia vera. This disease is characterized by the manufacture of an excessive number of red blood corpuscles; about 60 per cent. of the sufferers show serious haemorrhages or thrombosis, often fatal. The red corpuscles are manufactured from actively growing and reproducing cells in the bone marrow—cells which accumulate P^{32} and destroy themselves in the process. In 124 cases treated by the Mayo Clinic with radioactive phosphorus, satisfactory remissions were obtained in 80 per cent., partial remission in 13 per cent. and only 7 per cent. proved completely intractable. Leukaemia can be similarly dealt with; both lymphatic and myelogenous leukaemia yield with some success to P^{32}.

The problem in all these treatments is to localize the site of action of the radioactive material; P^{32} will be taken up most rapidly by the most rapidly growing and reproducing cells. If these happen to be the diseased tissue, there is hope of a successful treatment.

A special case of local accumulation of an element is provided by iodine, which is specifically accumulated by the thyroid in

enormous amounts as compared with any other tissue. Radio-iodine has therefore been employed against malignant thyroid growths and even in simple cases of hyperthyroidism. The malignant forms present, however, a secondary problem since it has been found by radioautography that the diseased cells take up less iodine than the healthy cells; the treatment therefore tends to fail because the wrong cells are irradiated. This is a case where radio isotopes have a strong competitor in X-ray therapy.

The use of radioactive tracers in therapeutics is, however, still in its infancy. It has been found possible to prepare radioactive compounds which are deposited by the body at definite sites. Anhydrous chromic phosphate is taken up almost entirely in the liver and spleen. Colloidal radiomanganese dioxide and radioactive gold solutions show possibilities in localized irradiation of lymphoid tissue, but no volume of clinical studies on these has yet been published.

Local irradiation has other attractive possibilities. The rays from different radio elements have widely different penetrating powers. For example, the gamma-rays emitted by radiocobalt have the tremendous penetration of X-rays, and in fact, radiocobalt is now used instead of radium for therapeutic purposes. Beta-rays on the other hand have a limited range, those of P^{32} being stopped by thin glass (very useful for laboratory purposes) and in body tissues have a "half penetration" distance of 1 mm. The effect of their radiation is therefore confined to a few millimeters from the site of origin. Many beta-rays are known of far lower penetrating power. Those of tritium, the radioactive hydrogen isotope, are attracting much attention as material for future studies: their particles will penetrate little more than the diameter of a single cell. If, for example, we can find an organic substance which is specifically accumulated by cancer cells, the "labelling" of this substance with radioactive hydrogen in stable regions of the molecule will permit very high radiation intensity to be concentrated on the diseased cells and on practically no others. The contrast between this and present methods is rather like that between dynamite and D.D.T. as a means of eliminating insect pests!

Less spectacular but equally useful applications of radioactive

tracer studies are found in volumetric estimations on normal and pathological circulatory conditions. The dilution of a known amount of radioactive material injected into the blood stream gives a ready measurement of circulating blood volume; by choosing suitable tracers plasma volume, total red cell count, non-cellular fluid phase and even total body water can be rapidly estimated on the living subject. The rate at which an injection becomes manifest at some distant site is a good index of the efficiency of the circulation in the region and very successful observations have been made on the diagnosis of such diseases as arteriosclerosis, and on the efficacy of various remedial treatments.

Tracer technique is in its infancy and is attracting great attention at present. It is, however, merely a new research tool, and as such is liable to misuse or over-emphasis. The attitude of the scientific worker to his problems should be not " What can I do with radioactive tracers? " but " Will tracer elements help me to solve this or that particular problem? " When we have reached that stage, the magic word tracer or radio-element will disappear from the *titles* of our papers and will find its proper place in the small paragraph on methods. In ten years' time, or even less, the present subject will seem a ridiculous topic for a Long Fox lecture—as absurd as discussing the use of the balance in chemical research, or of the scalpel in medical and biological research. The extent to which this attitude has developed will measure our progress in this subject.

SOME POST-MORTEM SURPRISES

The Presidential Address
to the Cornwall Clinical Society, June 6th, 1949

BY

F. D. M. HOCKING, M.SC., M.B., F.R.I.C.
Pathologist to the Royal Cornwall Infirmary, Truro.

All practitioners must be aware how very different is the hold on life of individuals. Some persons are able to withstand terrific pathological punishment before they succumb. For example, a man sixty-six years of age dropped dead in the street; no medical history was available and no doctor had attended him for many years, yet post-mortem examination showed an enormous liver weighing nearly 110 ounces in which apparently the whole of the normal tissue had been replaced by a primary carcinoma. A somewhat similar case was that of a woman, fifty-one years of age, who also dropped dead in the street; she had no medical history, and yet at the post-mortem examination we found an abdomen apparently solid with an ovarian carcinoma, in which the coils of both large and small gut were completely embedded and encased. (Figure 1.)

Most doctors are, of course, familiar with the man with " cor bovinum " who lives, perhaps, to a very old age, with some disability but by no means totally incapacitated. But at the other end of the scale there is the man, usually young, who develops a small patch of acute atheroma in a coronary artery and who is dead within a few months, because there has been no time for collateral circulation to re-establish the nourishment of the heart muscle: all that is found at the post-mortem examination is a coronary artery almost completely occluded, generally a quarter of an inch from its origin and for a distance of one-quarter to one-half an inch.

Amongst the " trivial " causes of sudden death, vagal shock is undoubtedly the most important; this shock can arise from

stimulation of any of the terminations of the parasympathetic nervous system—a rather frightening thought for the modern practitioner who is encouraged to use needles and other instruments on his patient with increasing frequency. Fortunately, sudden death from such an accident is rare; unfortunately, it is quite impossible to predict when it is likely to happen. It may even happen under surgical anaesthesia. I have seen two cases this year, both within a week, where the withdrawal of an intratracheal tube had caused sudden death although the patient was still anaesthetized. Light pressure on the larynx may also cause a vagal shock death. Sometimes this pressure is so light as to cause insignificant and apparently quite trivial bruising, and on occasion, there may be found no bruising at all—and nothing whatever to discover as a cause of death. It is vitally important in these cases to have an absolutely bloodless dissection of the neck. This, in my opinion, can be achieved only by dissecting the neck at the very end of the post-mortem examination. The technique adopted is to examine the abdomen first, and before opening the chest; concluding by cutting up the abdominal aorta and vena cava, thus drawing most of the blood into the abdominal cavity from which it can be swabbed out. The chest is examined by cutting the ribs through in the usual way but only up to the level of the second rib, the sternum being removed by shearing through the sterno-manubrial junction. In this way the great veins of the neck are not disturbed and the thoracic viscera are examined quite dry before their removal. In the case of young women who may have been aborted the procedure is, of course, reversed: the thoracic cavity is opened as above before disturbing the abdominal viscera, and the heart and blood vessels are first of all examined for the presence of air—or in the case of an apparently trivial fracture causing unexpected death, for fat. After the thoracic viscera are removed, the brain is taken out and then any remaining blood in the neck is drained by gravity into the thoracic cavity and mopped out. Only then is it safe to undertake the dissection of the neck. The field by this time is quite bloodless so that no possible confusion can exist as to whether a bruise is an ante-mortem bruise or a dissection artefact. All suspicious areas are, of course, examined microscopically, but if these precautions are taken some

awkward questions during a cross-examination can be dealt with confidently.

There is still some controversy about the part played by "Status Lymphaticus" in association with death from trivial causes. Experience during the years since the Pathological Society's Report on this subject tends to confirm the findings of the committee of investigation. All cases that might temptingly be ascribed to *status lymphaticus* can be covered, and covered more satisfactorily, under the heading of vagal shock. They occur practically always in children on whom throat operations are performed, or who have been found dead in their cots or perambulators. There can be little doubt that the former are cases of vagal shock. The latter are more difficult to assess. Many show acute respiratory infections, mainly acute bronchiolitis which can kill an infant in a matter of hours, with or without signs of suffocation. The only really satisfactory course to adopt in these cases is to withhold an opinion until after microscopical examination of the lungs, and not to allow oneself to be rushed by the Coroner or Police.

Then there are the cases in which the apparently obvious cause of death is not the actual cause. For example, a man known to be suffering from advanced disease of the heart was seen to be running for a bus when he stumbled and fell backwards. At the post-mortem examination, he showed an advanced degree of aortic calcification, coronary disease and cardiac hypertrophy that might be expected to be associated with sudden heart failure due to undue exertion. But he happened to be insured for a large sum of money against death by accident, so that a complete post-mortem examination was made. It was discovered that the dead man had suffered a subluxation of the third and fourth cervical vertebrae so that the spinal cord was nipped and bruised. (Figure 2.) Death had been due actually to shock associated with the injury, and not to the rather more obvious cardiac lesion: the widow duly collected the insurance money.

On another occasion, a girl was found dead one morning in a tent in a Youth Hostel camp. She showed all the classical signs of death by suffocation; spermatozoa were found in the vagina and very strong suspicion rested upon a certain member of the

community whose obvious attentions were equally obviously unwelcome. The young man vehemently protested his innocence and said also that he thought the girl was behaving somewhat peculiarly the night before her death. On account of this numerous sections were taken for microscopical examination. The spinal cord, pons, medulla and bulb all showed an intense perivascual cuffing with lymphocytes and there was no doubt that the girl had died of acute bulbar paralysis due to polioencephalitis! (Figure 3.)

An elderly woman was found dead in bed, and post-mortem examination showed a large infarct of the anterior wall of the left ventricle some two inches in diameter, quite sufficient to explain her death. The appearance of the lungs, however, was not consistent with this: they were intensely engorged and showed the plum-purple colour so often associated with influenzal pneumonia or poisoning with soporific drugs, particularly the barbiturates. Cerebro-spinal fluid, liver, stomach, kidneys and urine were therefore taken and analysed for poisons: some sixty grains of a barbiturate were recovered. There is no doubt that this woman died of poisoning, the infarct being probably associated and the terminal event.

Abdominal catastrophe may closely simulate irritant poisoning. A woman was taken violently sick after a meal prepared by her husband with whom relations were distinctly strained. She took to her bed and continued vomiting intermittently for four days. It was noted by her daughter that she always vomited most after having been given food and drink by her husband. She also had diarrhoea, and towards the end of the second day of her illness she passed blood-stained stools. She died after four days' illness, no doctor having been called, and a strong suspicion was aroused of arsenical or similar poisoning. The post-mortem examination revealed thrombosis of the superior mesenteric artery. (Figure 4.)

On another occasion, an unmarried woman was admitted to hospital with hyperpyrexia and covered with a haemorrhagic rash very suggestive of thrombocytopaenic purpura. She died before any investigations could be made. At the post-mortem examination the haemorrhagic rash was found to involve all the viscera, including the suprarenals, so that a diagnosis of meningococcal septicaemia or thrombocytopaenic purpura appeared to

PLATE I

FIG. 1.
Massive ovarian carcinomatosis without apparent symptoms.

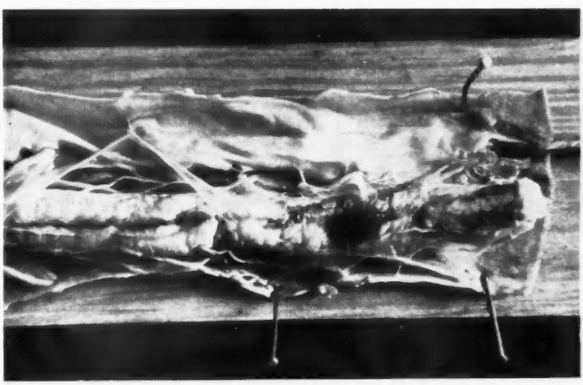

FIG. 2.
Bruise of cervical spinal cord due to fall on buttocks.

PLATE II

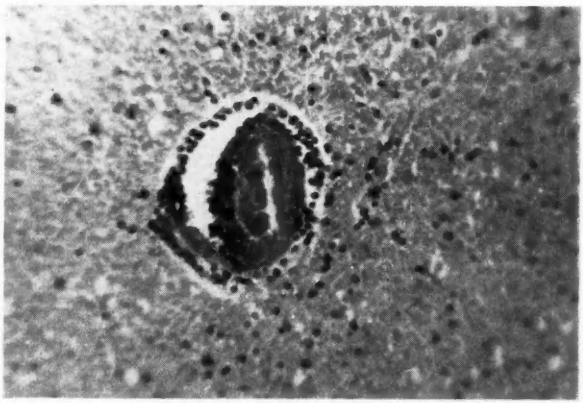

FIG. 3.
Spinal cord, cervical region, shewing perivascular cuffing in poliomyelitis.

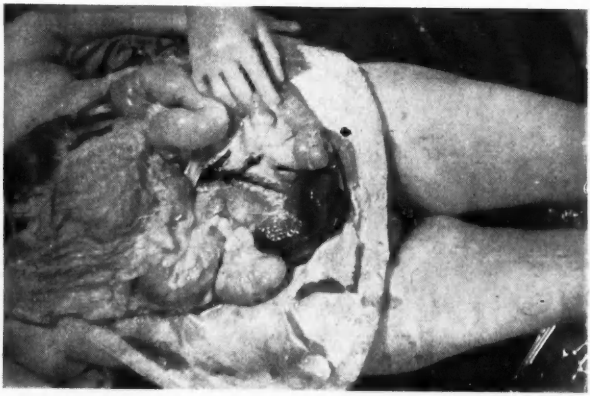

FIG. 4.
Thrombosis of superior mesenteric artery without gangrene of gut

PLATE III

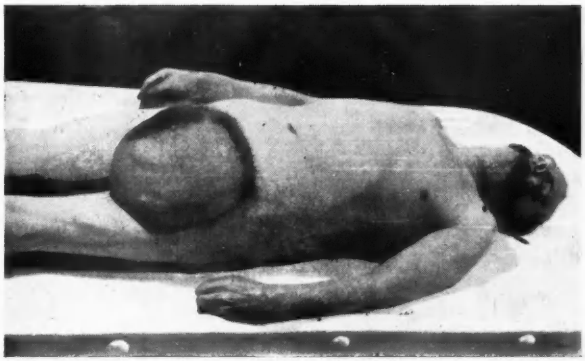

FIG. 5.
Scrotal hernia of unusual size.

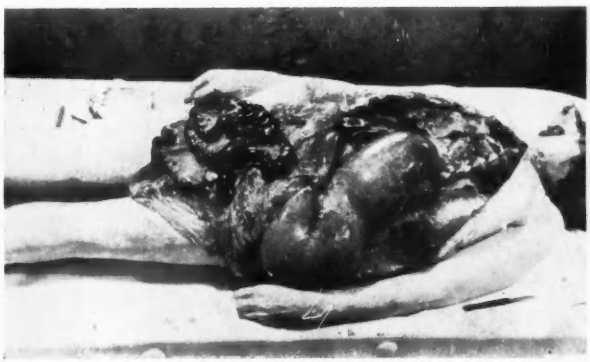

FIG. 6.
Gangrenous gut, and part of enormous stomach
in scrotal hernial sac.

be justified. But she was two and a half months pregnant. Could this be a case of poisoning? Examination of the viscera actually extracted some eighty grains of aspirin: this was, in fact, a case of suicide by poisoning.

A most remarkable case was that of a taxi driver who died two days after a minor car accident in which he received a blow of moderate severity in the upper abdomen, by being thrown against the steering wheel. He complained of nothing for twenty-four hours, after which he was seized with vomiting and died within twelve hours without seeing a doctor. At the post-mortem examination we found a scrotal hernia twelve inches in diameter, containing the whole of the gut, large and small, and one-third of a stomach measuring four feet in length and two feet three inches in circumference. The pancreas was drawn over the posterior abdominal wall in the form of a sheet of tissue. The gut was gangrenous. The blow on the abdomen had forced stomach contents and gas into the scrotal portion of the enormous stomach and the resulting pressure had caused strangulation of the gut in the sac. (Figures 5, 6.)

SOME MEDICAL PROBLEMS IN CHINA TO-DAY

BY

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It is nine o'clock in the evening—as I write I can see the queue starting to form for the out-patient session to-morrow. The men are coughing and spitting, and making themselves as comfortable as possible against the wall, whilst the women squat with undersized infants tied on to their backs. By the morning the crowd will have grown to a great throng waiting for the hundred-odd new tickets that will be given out so that they may consult a doctor. Many come up day after day in vain, others do not want the ticket for themselves—they will wait all night and then sell their place for several dollars to a late comer.

Meanwhile a private practitioner has just been in bemoaning that he has not really got room in his two houses to put the third grand piano he has bought for his children. He is an excellent doctor, and well trained, but has no time to give to the poor struggling masses; he is already more than occupied with his own patients.

Such are the problems of China; the poor so very poor and ignorant, needing and yet suspicious of foreign medicine: the rich very rich, and yet not enough well-trained doctors to treat any section of the community really adequately.

The problems in Hong Kong and in China itself are not, at the moment, quite the same. There are two kinds of doctors allowed to practise in the Colony. First, there are those who have a degree that would be recognized in the United Kingdom, the majority of these being Hong-Kong trained, with or without post-graduate experience elsewhere. There are also Chinese "doctors" or herbalists, who only use traditional Chinese drugs and methods. They are not allowed to use dangerous Western drugs. A great number of patients of all classes try these first, before resorting to foreign ideas. Patients with

palpable abdominal tumours often come up with many tiny skin burns made by lighted joss-sticks, or they have sticky black plasters applied to the umbilicus. Those with headache or sore throat have red weals made by special pinching of the skin, often with the idea of letting out a devil.

When Hong Kong was occupied by the Japanese the students in training mostly scattered to universities in Free China, or to India, where they continued their studies and took a Chinese qualification. As many wished eventually to practise in British territory such as Malaya or Hong Kong, they returned to study once more at Hong Kong University. I was assisting in examining about twenty-five of these last June, who were already qualified doctors by Chinese standards. They had had a long and difficult career, many having done excellent work as interpreters or with the Red Cross as well as graduating. On the whole the standard was satisfactory. The best were every bit as good as final-year students in England.

The problem of coping with the sick population or undertaking any preventive medicine is much more difficult. At present the Colony is overcrowded to a degree past belief, probably over a million people living here. These are partly refugees from China, either on account of war or floods; or they simply come because there is comparative safety here, and great prosperity. Fortunes can be made, and work is plentiful. Some charter special four-engined planes to bring them and their families, and these are willing to pay £150,000 to buy a house, or £5,000 key money for a flat; others come by train or boat with their belongings in a big string bag, tied on to a pole. They will occupy a " bed-space " in an already grossly overcrowded room, or put up a hut on any available waste land, so becoming squatters. There are thousands of these dwellings with no water supply or sanitation. Many huts are on roof-tops and all waste is just chucked into the street below, constituting a terrible menace to health. Dysentery, intestinal parasites, skin diseases, and under-nourishment are very common, but the worst problem of all is tuberculosis.

It is most difficult to say how much free or cheap treatment should be given to these people. The more that are treated in the big hospitals, the more come from over the border. It is

an unending problem. Apart from the ordinary diseases there are also special cases to be dealt with, such as smallpox, malaria, leprosy or outbreaks of cholera and typhoid fever. Mass free inoculation helps to prevent some of these, and the Government keep the most careful watch on the water supply. It is tested several times daily, so is virtually safe to drink straight from the tap, which for an Eastern city is remarkable.

At present there are two main Government general hospitals, a large fever and mental hospital, and various out-patient clinics. There are also several Chinese hospitals, a tuberculosis sanatorium and some smaller private and mission hospitals run by various religious bodies. There are numerous small nursing and maternity homes for Chinese patients only—often very expensive.

Fully qualified dentists are also in very short supply, and appointments have to be made for three months ahead.

Unfortunately, new doctors coming to the Colony find it almost impossible to get anywhere to live, and have to pay a fabulous amount to get an office. Good reliable drugs from the best houses, both British and American, can usually be purchased, but rubber goods and surgical instruments are about as difficult to get as in England. As well, there are great numbers of strange concoctions such as " Insanity Mixture " and " Vitamins "—" Hormones ", which seem to have a tremendous vogue at present and one is obviously expected to prescribe them. The Chinese are great believers in injections, and usually doubt the efficacy of drugs given by mouth.

Now for China itself. The future?—no one knows. There have been certain first-class medical schools which gave an excellent general training; amongst these were the Peking Union Medical College, on American lines, a Canadian school at Tsinan, several medical schools in Shanghai, one in West China, and one in Canton. The P.U.M.C. has recently restarted, and several of the others have made abortive attempts to do so. The latest news from Peking is that the college is still working under the Communists, as they are known to be desperately short of doctors. Difficulties will no doubt arise, both financial—it has been partly supported from America—and in providing good teachers, in maintaining discipline, and

in getting good drugs, since foreign trade at the moment is at a standstill. Although good vaccines are made in China, they have to rely a great deal on imported drugs. Now English is being banned as a language for teaching and commercial purposes, so new text books may have to be found. Information given by those in the North is that the medical and nursing courses are in some cases being seriously curtailed to meet the shortage of trained medical personnel.

There used to be also a number of second-class medical schools in smaller provincial towns, many kept up by the Japanese, with lectures in Chinese and badly printed text books, many in German. These continued under the Nationalist regime and gave the poorest possible medical education. Graduate students had never seen an abdomen opened. Their only idea of treating a fracture was to put it in a splint. Doctors from these schools are numerous, and practise in many of the smaller towns, with the results that might be expected.

Whoever governs China will have enormous problems to deal with. The large towns have some well-qualified doctors, but the rural areas could not be worse provided for. The various mission hospitals have done sterling work, but now, although allowed in many cases to carry on, they are much discouraged and have the greatest difficulties to face from the authorities. Organizations such as U.N.R.R.A. and W.H.O. tried to help by sending drugs such as penicillin, also dried milk and other food to particularly needy areas, but their gifts have been much abused, and quantities were sold or given to people for whom they were never intended.

In certain districts such as Northern Honan, special diseases such as kala-azar are very prevalent. The Friends' Ambulance Unit and W.H.O. both sent teams which give vast numbers of injections and other treatment for this, with excellent results. Everywhere tuberculosis and venereal disease are a terrible scourge. Methods of treatment are totally inadequate. The Chinese are a difficult people to educate along public health lines. Noisy clearing of the throat, and spitting are the fashion amongst all classes. The amahs and nurses are often seen discreetly spitting into the sink or baby's bath in the best establishments! Human excretion is always saved for fertilization

of the fields. It is dried in open spaces, often near towns, with smells and flies resulting. It is then put back on the plants so that intestinal parasites are universal, and wells become contaminated. After a meal in a restaurant a hot wet towel is passed to every diner, who wipes his sweating face and hands with it, so skin diseases and eye troubles such as trachoma are propagated.

In China anyone is allowed to set up as a doctor whatever type of training he or she has had. Three years ago I did a survey of all the surgeries of any size in a country town of about 100,000 inhabitants in North China. Some were reasonably clean and had hard wooden chairs and benches, and large gruesome anatomical diagrams hung on the walls. Shelves contained rows of bottles and scales and often charms. The best training that any " doctor " had was somewhat equivalent to a theatre porter at home; that is, one or two had worked in a mission hospital and had learned to give anaesthetics and put on splints. None had attended a medical college of any kind, and most had no training whatsoever. Yet they used a mixture of Chinese drugs and whatever foreign ones they could get—particularly penicillin, which they seem to think cures everything.

In the obstetrical and gynaecological world the major problems are sterility and the high infant mortality rate. Prolapse of the uterus is very rare in the North where the women do little manual labour, and much more common in the South where they work very hard on boats, unloading ships, in the fields and on the roads. Carcinoma of the cervix and ovarian cysts are fairly common everywhere. Fibroids are often seen, but not so frequently as in England. Pelvic endrometriosis is rare.

Sterility in China on the part of the woman is ground for divorce; or the husband may, if wealthy, get another wife. The most usual history is that of a woman who had one or two children quite quickly after marriage, they both died, and now years go by and no further pregnancy takes place. On examination the tubes and ovaries and uterus are completely fixed by adhesions, and it is very difficult to know how to help these patients. If any operation is advised, the woman is unable to

give her own consent and fathers, mothers-in-law, brothers and sons must all be consulted. In urgent cases, such as a ruptured ectopic, which is quite common, this delay is exasperating; the husband is often quite unable to say anything.

Semi-Westernization such as is seen in big cities, particularly Hong Kong, also makes treatment difficult. Patients in the north and in rural areas all feed their babies at the breast, and are in fact horrified if in certain cases such as open tuberculosis you suggest something else. In Hong Kong women come into hospital armed with their tins of well-known brands of baby foods, and say they have no intention of feeding or looking after their own children—they have amahs to do this for them. The poorer ones take the attitude: " You persuade us to have antenatal care and come into hospital for confinement—very well, we sit back and do nothing ", and they will not even try to breast-feed. With street hoardings and cinema screens shouting the value of this or that particular brand of dried milk, it is difficult for the foreign doctor in hospital to persuade them otherwise. Consequently outbreaks of infantile diarrhoea and vomiting are always occurring.

One last problem may be mentioned: it is almost impossible to get blood donors amongst the Chinese. Several husbands have bluntly told me, on explaining how serious is the wife's condition: " Well, if she dies I can easily get another ". If a donor is eventually persuaded to give blood, the bottle must be well covered and he must never know how much he gave. I had once finished taking about a pint from a healthy policeman, when he called out: " Be sure you stop when you have taken 5 cc. or my health will be ruined for ever ". Fortunately he never knew the truth, and his health remained good!

Such are some of the medical problems in China—at the moment the answers must in the main lie with the Chinese themselves.

Editorial Notes

Devaluation

To a scientific association the fall in the value of money presents itself primarily as a rapid rise in expenses. Even those bodies whose membership is steadily increasing are compelled to raise their subscriptions.

	1948	1950
	£ s. d.	£ s. d.
British Medical Association ..	3 3 0	4 4 0
Royal Society of Medicine ..	4 4 0	6 6 0
Medical Defence Union	1 0 0	2 0 0

Our own Society has so far retained the rate fixed in 1919: but the balance sheets show that each year expenses exceed income and our reserves are melting away.

How seriously these changes affect the *Journal* our readers can see:

Cost of producing the July, 1949, issue at rates prevailing at different dates:

	£ s. d.
1938	65 11 0
1945	82 1 6
1948	97 8 6
1950	130 17 0

or about £5 10s. a page.

Cost of production has doubled in twelve years.* A larger circulation goes some way to meet the increase, but we have had to raise the subscription from half-a-guinea to sixteen shillings. We have adopted smaller type and cheaper paper: the 1950 cost for the same issue in the 1938 style would be £183. We have omitted lists of Past Presidents, subscribers, books received and many examination results.

* "In 1914 each number was produced for £36; in 1919 . . . £62." *Jl.*, 1919, **36**, 177.

But the main economy forced upon us is a severe limitation of the length of original articles. And it is this which gives the most trouble. Oh for the days when we could print each article as it was received, and an obituary notice ran to five pages, with portrait! For when we "condense" an article the author naturally resents the sacrifice of his carefully chosen phrases—and it is even worse if we ask *him* to do it. In effect we find ourselves committed to quite considerable labour to make ourselves thoroughly unpopular!

We take this opportunity to apologize for the annoyance this curtailing must produce; to thank the authors for their patience and co-operation; and to express the hope that they will continue to support us by providing the material without which the *Journal* could not survive: adding the appeal traditionally exhibited in "Far West" bars, "Don't shoot the man at the piano —he is doing his best".

Obituary

FRANK GOWER BERGIN

Frank Gower Bergin passed away in his sleep on October 25th, after a prolonged period of restricted activity due to cardiac weakness. His father and brother were at one time Directors of Müller's Orphanage; two brothers were doctors, and a sister was for a while Casualty Sister at the General Hospital. With the late James Taylor, he pioneered radiological services in Bristol, working for many years at the Bristol General Hospital, and later at the Infirmary and the Homoeopathic Hospital as well. In those days there were real dangers to be run, but he was careful, and his health did not suffer seriously. During the first world war he also served in France. He had an extensive private practice in radiology, and his portable apparatus was in great request in the surrounding districts, in spite of smashed tubes and difficulties of transport, which made this work vexatious and expensive. When high power X-ray aparatus and radium became available, he handed over these services to the late Bryan Adams, and confined himself to radiodiagnosis.

He had many interests outside the profession. At one time he was a keen and successful photographer, and always an enthusiastic gardener. He had a lively sense of humour, and a genius for friendship and hospitality. His house in Bristol and his bungalow and Severn-side gardens at Walton Down were constantly thrown open for parties of friends, often fifty or more at a time, students being particularly welcome. He was very active in the service of his church at Alma Road, Clifton. His two sons are both members of the profession, one of them specializing in aviation medicine, and the other in radiodiagnosis.

Reviews of Books

Cystoscopy and Urography. By J. B. MACALPINE, D.Sc., F.R.C.S. Third Edition. Pp. 570. Illustrated. Bristol: John Wright & Sons Ltd. 1949. Price 63s.—This scientific treatise is one of which British surgeons the world over may be proud. It is a model of exposition in every aspect and a magnificent legacy from a doyen of urology. The faultless accuracy both in the illustrations and the written word reflects the mind of the author. Nothing is omitted; all is treated with dignity and precision. Particularly valuable are the opening chapters which deal with the complex armamentarium of cystoscopy and leave no excuse for incompetence on the part of the surgeon or staff. Illustrative cases are quoted maintaining a clinical interest throughout the book and the controversial aspects of uro-pathology are dwelt upon. This work provides the present-day cystoscopist with a most comprehensive and complete guide.

Introduction to Surgery. By RUTHERFORD MORISON, M.D., F.R.C.S., D.C.L., LL.D. and C. F. M. SAINT, C.B.E., M.D., M.S., F.R.C.S., F.R.A.C.S. Fourth Edition. Pp. 330. Illustrated. Bristol: John Wright & Sons Ltd. 1948. Price 42s.—A fourth edition of this book, after an interval of twelve years, is very welcome. The object of the book is to emphasize the general principles on which surgery is built, and to enable the student to work out for himself the problems he will meet with in his icinical cases. Many of the classical methods of treatment are described In more than one association, e.g. the use of B.I.P.P., in the treatment of abscesses. The recent student may rarely havc seen some of these accepted procedures, but they are methods that have given excellent results in the past, and should still hold their place in modern surgery. Throughout the book the clinical experience of the authors forms the basis for treatment; the chapter dealing with appendicitis and peritonitis stands out. Immediate operation is advised in all cases of appendicitis, irrespective of the duration of the disease, but in peritonitis a conservative

line is recommended. The use of sulphonamide drugs and penicillin is referred to repeatedly, but stress is not put on the indications and contra-indications. Blood transfusion is rather briefly dealt with and little is said of its dangers. The 304 illustrations all illustrate the clinical conditions in an excellent manner. This book can be strongly recommended to the medical student; it should also appeal to the surgeon and the teacher.

Bedside Diagnosis. By C. M. SEWARD, M.D., F.R.C.P. Pp. xii, 372. Edinburgh: E. & S. Livingstone Ltd. 1949. Price 17s. 6d.—No clinician ever feels satisfied with a book on diagnosis, for no book on medical diagnosis can reflect more than the conventions of diagnostic method. Dr. Seward, writing plainly and directly about the art of diagnosis as he sees it, succeeds as well as, if not better than, other clinicians who have attempted the like. It is a difficult book to read right through; but used as a systematic key, it will prove a stimulus and source of new thought both to the practitioner and to the student. The characteristic and most valuable feature of the book is the presentation of physiological fact as a preliminary to diagnosis. To the practitioner, puzzled by a problem in diagnosis such as, for example, a patient with lateral abdominal pain, this book gives a clear insight into anatomical sources and physiological mechanisms of pain from this quarter, and also an estimate of the likely causes and the special features of each of them. This method is applied to pain in all parts of the body, to special symptoms such as haematemesis and haemoptysis, and to symptom complexes such as anaemia, fever and debility.

The final-year student, wishing to tidy the litter of hastily acquired empirical knowledge in his overtired brain, will find in this book a clear and helpful source of reference. There are a few minor errors of fact; and very occasional lapses into unsubstantiated dogmatism. One example of the latter is the bald statement on p. 78 that the proximate cause of pain in nervous dyspepsia is pylorospasm. The cover and binding of the book are neither stout nor aesthetically pleasing; but the printing is clear and there are some useful diagrams.

Proceedings of the Ninth International Congress on Industrial Medicine, London, 1948. Pp. 1115. Illustrated. Bristol: John Wright & Sons Ltd. 1949. 60s.—This book contains the papers read at the Congress held in London in the summer of 1948 when contributions were made to the whole field of industrial medical and nursing practice. There are articles on work and skill, incentives and absenteeism, dermatology and ophthalmology, and the hazards and control of radiant energy. There are excellent accounts of pneumoconiosis and other lung diseases, of occupational tumours of the bladder, and of atmospheric pollution with special reference to the dust problem in mining. Proposals are made for the better training of the industrial medical officer and the integration of occupational health with other health services. All the contributors are experts in their respective fields. The book is well produced and sufficiently illustrated. It contains something of interest to may clinicians and will be often consulted by those whose chief interest is the prevention of disability.

Synopsis of Obstetrics and Gynaecology. By ALECK W. BOURNE, F.R.C.S. Tenth Edition. Pp. 530. Illustrated. Bristol: John Wright & Sons Ltd. 1949. Price 21s.—The dogmatic teaching in this book makes it very valuable to the student: its completeness also makes it of value as a book of reference. As usual we are told that a persistent occipito-posterior may be due to insufficient flexion; also, as in most text-books, the operator is told to rotate the occiput forward. No mention, however, is made of flexion in order to make rotation easy.

Conduct of Life Assurance Examinations. By E. M. BROCKBANK, M.B.E., M.D., F.R.C.P. Third Edition. Pp. 176. London: H. K. Lewis & Co. Ltd. 1949. Price 12s. 6d.—The last edition of this book was reviewed two years ago so that there is little to add. Several improvements have been made. The various forms of insurance and pension schemes are dealt with in considerably more detail. The section on blood pressure has been revised, as has also the one on glycosuria. The author has also made some statements about the undoubted increase in deaths from carcinoma of the bronchus. It remains a very sound account of various forms of examination for life assurance and guide to the interpretation of abnormal findings. The fact that a new edition has been called for in two years shows that it has been considerably used by members of the profession.

A Synopsis of Medicine. By Sir HENRY TIDY, K.B.E., M.D., F.R.C.P. Ninth Edition. Pp. 1264. Bristol: John Wright & Sons Ltd. 1949. Price £1 10s. 0d.—In this ninth edition will be found much that is new and many revisions. The new articles deal with two groups: old diseases included for the first time and new diseases or syndromes. The author qualifies the latter by describing them as " so-called " new diseases, and mentions in his preface, Acute Infectious Lymphocytosis, Temporal Arteritis, Acute Cortical Necrosis of the Kidney, and the influence of Maternal Rubella on Congenital Defects. Of this influence of Rubella a wise caution is expressed, " some evidence exists that some other virus infections may have similar action during pregnancy ". An open mind on the problems of mental and cerebral defects is more than ever necessary. Much new work on Malaria is included, and the re-arranged and re-written article on Typhoid Fever throws fresh light on an old disease. Yet with all that has been added the size of the volume has only increased by four pages. There is a freshness and youth about this ninth edition that makes it hard to believe that Tidy's *Synopsis of Medicine* is now in its thirtieth year. The printing and production is better than ever—the paper in particular is of a better quality than in some of the later reprintings. No doubt this is the result of the new printing works of the Stonebridge Press, recently brought into use by John Wright & Sons at Brislington, Bristol.

Medical Annual, 1949. Edited by Sir HENRY TIDY, K.B.E., M.D., F.R.C.P. and A. RENDLE SHORT, M.D., B.S., B.Sc., F.R.C.S. Pp. 448. Illustrated. Bristol: John Wright & Sons Ltd. 1949. £1 5s. 0d.—The sixty-seventh issue of this annual maintains the high standard of its fore-runners. Foremost among the articles must be ranked that on Malaria

which embodies much new light on the life-cycle of malarial parasites: it is a matter for regret that the Malaria Research Unit at Cairns in Queensland is now closed. Next to Malaria comes the recent work on Bilharziasis: it is surprising to read that this disease is the most extensive in distribution after Malaria. There is an important article on the care of chronic and aged sick by Dr. Marjory Warren, the English pioneer in this study. Occupational health and industrial disease continue to attract attention and are well discussed. Advances in the treatment of megasoblastic anaemia continue and the new cobalt containing vitamin, known as B12, is fully described. Surgical articles are no less interesting especially gastric and thoracic. The section on legal decisions and legislation is well worth reading: especially a decision dealing with a local partnership case in which the judge described the whole wording of the partnership's covenant as so hopelessly vague as to render the restrictive clause void. Evidently the pitfalls of medical covenants and agreements are not always avoided by the most experienced lawyers.

Rational Medicine. By J. W. TODD, M.D., M.R.C.P. Pp. viii, 378. Bristol: John Wright & Sons Ltd. 1949. Price 25s.—This is an unusual and stimulating book. The author writes critically on the interpretation of physical signs and symptoms and on the general principles of medical treatment. Hardly a page is turned before yet another medical myth has been debunked. Perhaps this rather negative attitude may account for the fact that the book is difficult to read consecutively without a feeling of mental exhaustion. However, it contains so much good material and original thought that the book can be earnestly recommended to all doctors, particularly the general practitioner and the consulting physician. They will find that to read a chapter of this book will pleasantly disturb their preconceived ideas, and set free in them thoughts long imprisoned by usage and tradition. The author is particularly to be congratulated on his illustrations of the emotional causes of disease.

Operative Surgery. By FREDERICK C. HILL, M.S., M.D. Pp. xii, 696. Illustrated. New York: Oxford University Press (Geoffrey Cumberlege). 1949. 63s.—This book is beautifully bound, printed on excellent paper and profusely illustrated with clear drawings. A change from many textbooks of operative surgery is the starting of each chapter with a consideration of the pathology of the conditions for which operative procedures will be described, rather than the anatomy of the organs concerned. In his preface, the author states that his book is designed for the intern, resident and less experienced surgeon. Some operations are well described but many are not: and space is wasted in descriptions and illustrations of alternative operations (for example for peptic ulcer). Often no advice is given as to which operation to select. For instance transpleural and extrapleural drainage of subphrenic abscess are described but there is no mention of the now established superiority of the extrapleural route. There are some remarkable omissions. No operation on the sympathetic nervous system is described, and no method of prostatectomy other than suprapubic is mentioned. Admittedly the scope of the book is deliberately limited but such restraint is inconsistent with a detailed description of

total gastrectomy and of pneumonectomy. Some of the advice is, even allowing for individual opinion, unsound. The less experienced surgeon may be seriously misled by reading that excision is the only treatment of value for ganglion of the wrist, that the best treatment for a boil is hot fomentations and incision, and that severed nerves should be sutured immediately whenever possible. Equally misleading is the section on anal fistula, where the final wound is shown as a narrow deep trench instead of a wide flat saucer, and that on anal fissure, where no mention is made of the necessity of dividing the subcutaneous sphincter muscle. A more general criticism is that there is throughout a failure to get down to hard facts, little about the difficult situations one meets and how to deal with them. One looks for guidance but finds only instruction. It is no doubt very difficult to write a good and readable textbook of operative surgery, which accounts for the comparatively few which exist. Though this one must be classed as readable it cannot, in its first edition, be rated as good.

Mongolism. By M. ENGLER, M.D. Pp. viii, 208. Illustrated. Bristol: John Wright & Sons Ltd. 1949. Price £1 1s. 0d.—Dr. Engler is not satisfied with the term "Mongolism" and proposes "peristatic amentia" for aetiological reasons. The first part of his book is devoted to a description of the condition—history, geography, pathology, prognosis, and treatment. With these points he deals thoroughly along accepted lines. The second part of the book is devoted to the thesis that this condition is due to the implantation of a normal ovum in uterine mucosa abnormal on account of immaturity, curetting, contraceptives, miscarriage, multiparity or senescence. Those interested in this question will of course examine the author's arguments for themselves. Text, illustrations, index and general production are well up to the high standard so long associated with Wright's.

Meetings of Societies

BRISTOL MEDICO-CHIRURGICAL SOCIETY

Committee 1949–50

President: Dr. H. J. Orr-Ewing. *President Elect:* Mr. W. A. Jackman. *Treasurer:* Dr. Sutton. *Secretary:* Mr. A. L. Eyre-Brook. *Editor of "Journal":* Mr. E. Watson-Williams. *Assistant Editor:* Dr. N. S. Craig (*ex officio*). *Library representatives:* Professors Milnes Walker, Perry, and Drew-Smythe.

Elected members: Dr. Gornall, Dr. Kersley, Dr. Tryon, Dr. Lennox Robertson, Dr. Rowley, Dr. Marwood, Dr. Lucas, Dr. Silvey.

The Annual General Meeting was held in the University on Wednesday, October 12th, 1949, when the retiring President installed his successor Dr. H. J. Orr Ewing. Dr. Orr Ewing's Presidential address appears on

page 1 of this issue. The officers of the society presented their Annual Reports which were received. Details included in the Secretary's Report have appeared in our pages from time to time. There are now 382 members. The Honorary Treasurer's Report is summarized in the balance sheets which we hope to publish shortly. For the first time for many years vacancies in the Committee were filled by ballot as is laid down in the Laws.

Editor's Report

During the past year we have secured an increased number of non-member subscribers. The *Journal* has handed over to the University Library eighty-five "Exchange" publications priced at £105 (before devaluation) and the books reviewed, at £37 11s. 6d. This sum of £142 11s. 6d. represents "invisible earnings" by the *Journal* for the Society.

We have now been paid the arrears of subscriptions for the years 1939–45, £100: and the sum of £170 voted in 1947 to cover the deficit which arose from the great increase in the cost of printing. This increase has continued and although the accounts for the year have not yet been audited I may tell you that the nett cost of production is a little over £100 for each quarterly issue. Fortunately we have covered half this by receipts from advertisements, which are now about three times as great as in 1947. We expect therefore to show a modest profit on the year's work and can look forward to a partial relaxation of the severe limitations that had recently to be imposed—in fact, to a larger and we hope a better *Journal*.

The Second Meeting of the Society on Wednesday, November 9th, was devoted to a Clinical Meeting at the Bristol General Hospital.

Cases were shown by: Mr. A. Wilfred Adams, Mr. J. Angell James, Dr. C. D. Evans, Mr. K. H. Pridie, Mr. Ashton Miller, Professor A. V. Neale, Dr. Beryl Corner, Dr. A. E. W. McLachlan, Drs. G. H. Tovey and F. W. Lewis, Dr. J. Apley, Mr. Anthony Palin, Professor Milnes Walker, Mr. R. Belsey, Dr. S. Curwen, Mr. W. A. Jackman, Mr. R. V. Cooke, Mr. R. V. Cooke and Professor C. B. Perry, Dr. Robert Warin, Mr. A. L. Eyre-Brook, Mr. G. L. Alexander and Mr. D. G. Phillips.

The Third Meeting was held on December 14th, when Drs. Smart and Apley gave an account of their impressions of **"Medicine in America"**. This was illustrated by a remarkable series of colour photographs, showing well-known cities, hospitals and physicians.

BRITISH ORTHOPAEDIC ASSOCIATION

The British Orthopaedic Association held their three-day Annual Meeting in Bristol on October 13th to 15th. The last time they were in Bristol was in 1927. The first morning's meeting was confined to the Fellows and was largely a business meeting. The afternoon's meeting included a joint paper by Dr. A. L. Taylor and Dr. P. H. Beamish on **"Radiology and Histopathology of Malignant Bone Tumours"**. This was followed by a joint paper by Dr. R. C. Tudway and Dr. S.

Curwen on the **" Radiotherapy of Bone Tumours "**. [This paper was to have been given by the late Dr. Raban.]

The Friday morning meeting was devoted to a discussion on Lumbar Intervertebral Disc Protusions. Friday afternoon was devoted to a clinical meeting held at Winford Orthopaedic Hospital, where cases were shown by all the members of the staff and also by Professor Milnes Walker (by invitation). Saturday morning was devoted to further papers, including one by Mr. G. L. Alexander on **" Protrusion of Cervical Discs "**.

Devon and Exeter Medico-Chirurgical Society

At a clinico-pathological meeting on November 17th, 1949, Dr. C. P. Warren showed a post-mortem specimen of congenital pyloric stenosis occurring in a six-weeks old pedigree Scottish terrier puppy, and subsequently described two cases of cardiac catastrophe the onset of which had simulated abdominal surgical emergencies.

Dr. G. Stewart Smith demonstrated and contrasted, by means of lantern slides, two of the rarer types of thyroid enlargement, Hashimoto's and Riedel's.

Dr. Stewart Smith further demonstrated two unusual cord lesions: one of tuberculoma involving the third and forth cervical segments which must have been present for at least twenty months before pulmonary lesions were radiologically visible; and one of necrosis of cord following X-ray treatment of a supposed case of carcinoma of the middle ear.

At a meeting on December 1st, 1949, Dr. F. O. MacCullum spoke of **" The Role of the General Practitioner in Epidemiological Research in Virus Diseases "**.

Virus disease, he said, is coming out of the laboratory into the field. By taking accurate notes of even a few cases the G.P. could add to the sum of knowledge in this direction as had already been done by Dr. Pickles of Wensleydale. Incubation periods could be verified by noting single and only possible contacts. Material for the diagnosis of virus diseases is readily obtainable by the G.P. Such material is wanted for laboratory investigation in cases of suspected influenza. Where does influenza go in the summer? Where does an influenza epidemic start? Vaccines prepared and given in advance may confer immunity to influenza but it must be confessed that these were often ineffective owing to a change of strain in the virus.

Atypical pneumonias, characterized by acute onset, intense headache, malaise, depression, hacking cough and absence of fever or other physical signs were probably virus infections. One of these—so called Q Fever, due to rickettsia Burneti—appeared, at any rate in a proportion of cases, to be milk-borne. The incubation period was fourteen to twenty-five days and rashes were rare. The rickettsia could be excreted symptomlessly by cows, sheep and goats over a period as long as three months and had been found, though rarely, in cattle ticks and dog ticks. No serological tests were as yet available in this country for differentiating strains of the virus of polio-myelitis and the viruses responsible for a great group of cases labelled encephalitis had still to be worked out. The syndrome of lymphocytic meningitis was probably caused by many different viruses.

In eighty of a hundred cases investigated the virus had not been identified. The distribution of cowpox in this country had not yet been fully mapped. Dr. MacCullum asked for scrapings from suspected cowpox lesions.

At a meeting on December 15th, 1949, Dr. G. Stewart Smith discussed the fate of the over-sixty-fives. A summary of his lecture has been published in the *Lancet*.

South Western Laryngological Association

A meeting of this Association was held at the Salisbury Combined Hospitals on October 3rd, 1949, Mr. W. H. Bradbeer in the chair. Mr. C. A. Hutchinson demonstrated the technique of the fenestration operation. In the afternoon, at the Salisbury Infirmary he showed several cases of fenestration ; two cases of malignant disease of the larynx, a thyroid hondroma, and cases of deafness associated with Paget's disease and with osteogenesis imperfecta.

The first meeting of 1950 was held at the Bristol General Hospital on January 7th. The following cases were shewn and discussed:

Mr. E. Watson-Williams : cyst of the nasal vestibule; severe but symptomless atrophic rhinitis; keratosis pharyngis.

Mr. G. R. Scarff: "nature's radical mastoid" ; pemphigus of the larynx; tuberculoma of the larynx.

Mr. J. Angell James: carcinoma of the ethmoid; carcinoma of the larynx; rhinolith.

Mr. H. D. Fairman: conductive deafness; Menière's disease; chronic pharyngitis.

The next meeting will be held at Truro on April 1st.

The West of England and Wales Society of Dermatology

The inaugural meeting of the West of England and Wales Society of Dermatology was held at Bristol on Friday, October 28th, 1949. A clinical demonstration was held at the Bristol General Hospital and was followed by a discussion at which Dr. Clifford D. Evans took the chair. A list of provisional rules was drawn up and will be reviewed after one year. Membership is open to those who are particularly interested in the study of Dermatology. Three meetings will be held during each year. These will be arranged as follows:

The fourth week in October ..	Bristol.
The fourth week in January ..	Wales
The fourth week in April ..	Gloucester, Exeter or Plymouth.

Dr. Geoffrey Hodgson and Dr. J. R. Simpson kindly offered to hold the next meetings at Cardiff (January) and Exeter (April) respectively. In each case the meeting will be on the Saturday morning and will take the form of a clinical demonstration and discussion followed by lunch. Dr. Robert Warin was elected as the co-ordinating secretary.

Wessex Rahere Club

The Second Annual Dinner of the Wessex Rahere Club was held at the Spa Hotel, Bath on October 15th, 1949. Professor Sir James Paterson Ross, K.C.V.O., was present as Guest of Honour and some thirty-nine members attended under the chairmanship of Mr. C. E. Kindersley. The toast of " The Hospital " was linked with the name of Sir James Paterson Ross. In reply, Sir James outlined the present situation as regards reconstruction and development of Bart's and in particular the great progress which was being made at the Charterhouse site and in the provision of a residential hostel.

Membership of the Club, which is open without subscription to all Bart's men in the South-West, is now well over one hundred and increasing steadily. Professor R. A. Brocklehurst (Bristol) was unanimously elected Chairman for 1949–50 and the Hon. Secretary re-elected. The Third Annual Dinner will be in Bristol on October 21st, 1950. There will also be a dinner during April, 1950, at Taunton. It is hoped that any Bart's men who are not yet in touch with the Club, will apply to the Hon. Secretary (Mr. A. Daunt Bateman, 3 Circus, Bath) so that they can be kept informed of future meetings.

British Medical Association

Bath, Bristol and Somerset Branch

Officers, 1949–50. *President*, Dr. Percy Phillips. *President-elect*, Dr. W. J. Petty. *Vice-Presidents*, Dr. R. G. Gordon and Mr. J. R. Nicholson-Lailey. *Honorary Secretary*, Dr. O. E. L. Sampson. *Honorary Treasurer*, Dr. C. H. G. Price.

Programme for 1950. February 22nd—Bath. March 9th—Taunton. April 26th—Bristol (A Clinical Meeting). May 24th—Weston-super-Mare.

Gloucestershire Branch

December 8th. Mr. H. Mower, **" Some everyday Ear, Nose and Throat Conditions ".**

January 12th. Mr. G. C. Dorling, F.R.C.S., **" Indications for Surgery in Gastric and Duodenal Ulcers ".**

February 9th. Dr. E. N. Davey, **" Blood Transfusion to-day ".**

March 9th. Dr. Donald Teare, **" Medical Methods in Criminology ".**

April 13th. Clinical Meeting.

May 11th. Annual Meeting (business).

June 8th. (Stroud) President's Guest.

BRISTOL DIVISION

Dr. Charles Hill addressed the Division on Wednesday, November 23rd, at the Royal Fort, Bristol University. His subject was **"The B.M.A. and all that".** Members were allowed to introduce visitors and about half the audience of over 300 persons appeared to be non-medical. Dr. Hill gave a brief account of the organization of the Association, emphasizing that its main function was scientific, though it was apt to be known to the public only by the small part of its work which was devoted to medico-political matters.

He described the extent of its services, i.e. the work of the Central organization, its library, its overseas branches and relations with affiliated associations in the Dominions, its Public Relations Office, its Educational Department including medical films and the special Journals which it issued in addition to the *B.M.J.* He announced that it was about to produce a popular Health Journal and reminded members that the subscription is now four guineas. He then gave a brief account of the World Medical Association, of which he is President, and its relations with W.H.O. (a "Government" body) and concluded with a few tips for broadcasters from his personal experience.

On January 25th, 1950, in the University, Dr. J. A. Gorsky delivered a B.M.A. lecture on **"The Medico-Legal Investigation in Some Murder Cases".**

WEST SOMERSET DIVISION

This Division held a Clinical Meeting at Yeovil District Hospital on November 24th, 1949, when Mr. E. G. Tuckwell, F.R.C.S., gave a most interesting talk on **"Sympathectomy".**

Local Medical Notes

APPOINTMENTS

South-Western Regional Hospital Board.—

A. G. McPherson, M.Chir., F.R.C.S.—Consultant Surgeon, Bristol.

J. M. Naish, M.D., M.R.C.P.—Consultant Physician, Bristol.

D. A. Barley, M.B., F.R.C.S., D.L.O.—Consultant Ear, Nose, and Throat Surgeon, Plymouth.

J. J. Kempton, M.B.E., M.D., M.R.C.P., D.C.H.—Paediatrician, Canadian Red Cross Memorial Hospital.

University of Birmingham.—

S. D. Loxton, Lecturer in Obstetrics and Gynaecology.

SIR ALEXANDER FLEMING*

In honouring Sir Alexander Fleming we do more than acclaim a great scientist; we convey our thanks to one whose work has been of the utmost benefit to mankind. There will be many present in this hall who have reason to be profoundly grateful to him for health and even for life itself.

Sir Alexander Fleming was associated in his early work at St. Mary's Hospital with Sir Almroth Wright, a pioneer in the method of combating disease by stimulating the defences of the body. Sir Alexander was the first to realize that an " antiseptic " must be not only toxic to bacteria, but harmless to their natural enemies the white blood corpuscles.

After pioneering work on antiseptics during and after the First World War, when he served as a Captain in the R.A.M.C., Sir Alexander made the remarkable discovery that human tears contain a substance, lysozyme, capable of destroying bacteria. Lysozyme was later found in white of egg, and although its nature has only recently been determined this work drew attention to natural antibacterial agents.

Such in brief, was the background when an unexpected event occurred twenty-one years ago in the bacteriological laboratory of St. Mary's Hospital, Paddington. A drifting spore of a mould, *penicillium notatum*, came to rest upon a culture plate of bacteria. That spore grew to a patch of mould, and Sir Alexander noticed that the neighbouring bacteria had not developed as they had over the rest of the plate. He later remarked with characteristic caution " the appearance of that culture plate was such that I thought it should not be neglected ".

It was not neglected; pure cultures of the mould were grown; the active substance produced was named " penicillin ", and its value as a promising antiseptic was recognized. The true worth of penicillin could not, however, be seen at that time because it could not be isolated. It was not until the early 1940s that Sir Alexander's work was brought to fruition at Oxford in the hands of Sir Howard Florey, Dr. Chain, Dr. Abraham and others.

This is not the occasion to recount the full story of the use of penicillin in the treatment of war wounds and in the case of otherwise fatal bacterial infections. Nor is it the time to tell of the unprecedented collaborative investigation between some forty research laboratories in this country and in the United States of America. This collaboration led both to the production of the large quantities of penicillin necessary for the treatment of war casualties, and to the establishment of the chemical structure of this remarkable and elusive substance. Seldom can one man have started scientific investigations of such importance and of such magnitude.

Sir Alexander has, nevertheless, reasons for disappointment. Chemists have not been able to improve penicillin. Nor have chemists been able to produce it without the mould, save in minute traces. Again, bacteria can unfortunately become resistant to penicillin; it is therefore necessary that the sale of this beneficent material should be restricted. This is one of those rare controls which we willingly accept; it is a control which even you, Mr. Chancellor, may be disposed to retain.

In his work Sir Alexander Fleming may be said to have begun the

* Professor Baker's speech commending Sir Alexander Fleming for the degree of Doctor of Science, *Honoris Causa*, in the University of Bristol, 19th October, 1949.

writing of a great new book. The first chapters bear the titles "Lysozyme" and "Penicillin". Other workers are writing later sections, "Gramicidin", "Streptomycin", "Chloromycetin", "Aureomycin". But whenever the final chapter is written, the inspiration for the whole volume will still be found in the opening pages.

Degrees and Diplomas

University of Bristol.—

M.B., Ch.B.—Diana F. J. Duncan, A. R. Ebanks, Dorothy Field, Margaret J. Francis, G. C. K. Herapath, Ellen M. Marron, Jean Musgrave, Margaret R. Salisbury.

L.D.S.—D. C. Berry, G. D. Pamely.

D.P.M.—Muriel J. Davies.

University of Cambridge.—

M.D.—H. R. E. Wallis.

University of London.—

M.D.—D. G. Stewart.

Royal College of Physicians—

M.R.C.P.—F. Bolton.

Royal College of Surgeons.—

D.M.R.D.—W. R. Cole.

Conjoint Board.—

M.R.C.S., L.R.C.P.—Mrs. Dorothy Field.

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